

AMSAT

SATELLITE REPORT



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Board Moves on Major Fronts

AMSAT's Board of Directors met for its semi-annual session 17 through 19 April at the Goddard Space Flight Center, Greenbelt, Maryland. In attendance were Chairman W6SP and Directors W3IWI, W3GEY, K1HTV, G3IOR, VE2VQ and Alternate Director W3XO. Unable to be present was JA1ANG but Harry was able to be present by conference telephone to Tokyo on the 18th. Also present were Executive Vice President WA2LQQ, Vice President K9LF, Chairman of the Management and Finance Committee W2RS, Office Manager Martha Saragovitz, Orbit Managing Editor W1XT, Project OSCAR Digital Section Project Manager KL7GRF and invited guests ZS1FE, ZS1KE, W4PUJ and Special Guest, Karl Meinzer, DJ4ZC, President, AMSAT DL. The detailed minutes will be published in an upcoming *ORBIT* Magazine issue. Below is a summary of major items covered:

The AMSAT B.o.D.:

- Heard a report by the Chairman, Management and Finance Committee which strongly recommended increasing the dues/membership structure of AMSAT. The Board found the report convincing and resolved to increase the Life Membership rate to \$400 effective 1 April 82. Further, the Board instituted a new 10-year membership available at \$200. The annual dues of \$16 were unchanged.
- Appointed ZS1KE Secretary to the Board effective immediately to fill the vacancy created by the resignation of G3ZCZ.
- Reviewed Phase III status including technical matters, launch status, budget/funding posture and Management Plan.
- Commended JAMSAT on its notable contribution for the Phase IIIB and C flight spaceframes.
- Learned that from an engineering perspective, a complete recovery from the loss of Phase IIIA had been accomplished and that an L-transponder was likely to be aboard Phase IIIB and C.
- Learned that AMSAT Hungary would again provide the Battery Charge Regulator for Phase III.
- Learned that a solid fuel kick motor had been obtained from the USAF with the help of W6SP and that the rocket was in storage.
- Commended the Ground Station Command Station Network (Phase III) under the coordination of W1HDX. The Network was found to be in a high state of readiness.



Clockwise at the table from near end: W6SP, W3GEY, G3IOR, K1HTV, K9LF, W2RS, DJ4ZC, ZS1KE, ZS1FE, VE2VQ, and the back of W3IWI's head. Sitting along the wall from left are K2UBC, Bud Schultz and Martha Saragovitz.

- Resolved that the joint AMSAT/AMSAT DL plan of constructing two Phase III satellites in parallel should be targeted on providing the maximum usefulness for the most amateurs to include the maximum hardware complement consistent with sound management and engineering judgement.
- Determined that the liquid fuel kick motor should be allocated to Phase IIIB to fly on Ariane and that the solid fuel kick motor shall be allocated to Phase IIIC to fly on a U.S. vehicle circa 1983.
- Reviewed UoSAT status and noted some schedule flux.
- Approved W3GEY's attending the IARU Region I meeting in Brighton in late April in conjunction with his UoSAT Program Review trip to Surrey.
- Heard a review of the SYNCART Project and authorized expenditure of up to \$15,000 for the balance of 1981 for the program by Project OSCAR.
- Reviewed the Research and Development program.
- Commended Joe Sugarman, W9IQO, for his JS&A AMSAT contribution campaign.
- Commended Larry Papke, WB5MPU and Ed Means, W0VO, for their tireless efforts on the solar cell campaign.
- Formed a committee to advise the Board on the potential value of holding an international radio

(Continued on page 4)

AMSAT A.C. List Grows

Efforts to staff slots in the Area Coordinator Team continue to produce very encouraging results. In addition to the new coordinators reported in ASR #5, five new team members have been announced by K1HTV this week. They are: W1IAS (Eastern Massachusetts), WA5FXE (Maryland), W7US (Arizona), WB5YDE (Northern Louisiana) and W5HCO (Southern Louisiana). The efforts to have the coordinator team fully staffed and ready reflects AMSAT's conviction that one key to organizational strength is good user interface at the local/regional level. With the anticipated influx of new members associated with the successful launch of Phase IIIB as well as UoSAT, AMSAT needs to have the Area Coordinator machinery in place, well-oiled and at full capacity in the months ahead. The efforts to solidify and motivate the team are being led by Operations Vice President K1HTV and Nebraska Coordinator KEØT.

Satcom Carriers Applaud Shuttle Success

The successful maiden voyage of the Space Shuttle Columbia had commercial satellite companies cheering and anxiously awaiting their turn at the launch pad.

Costs for launching communications satellites will be substantially lower with the shuttle, according to an article in *Electronic News*. The President of one firm, Ford Aerospace and Communications Corp., looks to the shuttle to relieve the considerable backlog of satellites and will "promote even more advanced Satcoms in the future." The first operational Space Shuttle flight is now scheduled for the fall of 1982, and will carry Western Union's Tracking and Data Relay Satellite (built by TRW). Three more test missions are planned in the interim.

Scientific Business Systems, Telesat of Canada, and Intelsat payloads have top priority at this writing. Also in the queue for a launch are India, Indonesia Palaypa, Hughes Syncom, AT&T's Domsat, Arabsat, and GTE's GSat.

Most users look for decreased emphasis on traditional weight-and-balance constraints, and expect to incorporate larger antennas and more powerful transponders as a result of the shift from expendable boosters. An executive from RCA was quoted as describing initial NASA payload costs as "very reasonable".

The military will be the largest single user of the Space Shuttle, however, and as a result is grappling with plans to launch the shuttle from the Air Force's Vandenberg site. The cost of military operations is expected to have a great impact on future launch costs for commercial customers, including a prospective AMSAT launch opportunity.

Oops!

In ASR #5 on page 3, the photo in the lower left was incorrectly captioned. The rear row, left to right, should read: WØPN, W6PAJ, VE1SAT, ZS1FE, WØLER, W3GEY, K1HTV, KA9Q, WDØEEL and W1HDX.

Wyoming DX-pedition Planned

One of the rare "satellite states" will appear on OSCAR 7 and 8 this summer. Ed, WØVO and Bob, KEØT will man a weekend sojourn to Wyoming for Mode B and hopefully Mode J contacts. Planned dates are June 12-14. Check Mid-Continent AMSAT Net for final details.

New AO-8 Command Station

Norm Williams, K3NW, has begun his tour of duty as an AMSAT-OSCAR 8 Ground Command station. From his QTH in Fleetwood, Pennsylvania, Norm will join the staff of AO-8 Command Stations operating under the direction of W9KDR at ARRL Headquarters. AO-8 operations are directed by ARRL while AO-7 operations are directed by AMSAT under K1HTV. Norm underwent several weeks of training and orientation before assuming his new responsibilities in mid-April. Congratulations to Norm on his new assignment and thanks from those who will be counting on him in the future. Likewise, our continued thanks to the balance of the AO-8 Command Station team consisting of W3HV, W6CG, W6ELT, VE3HCR, G3YJO, W1AW, W9KDR and VK3ZDH.

Amateur Radio Astronomy Group Formed

The Society of Amateur Radio Astronomers has been organized to unite those involved in amateur radio astronomy. The group includes hams who use Amateur Radio equipment for radio astronomy work, and optical astronomers who desire to expand their observations to the longer wavelengths. According to Vice President K5DZE, the goals of the organization are to promote the science of amateur radio astronomy, to coordinate joint efforts of optical and radio astronomers, and to support an educational and training program for newcomers to the hobby. Activities include observational projects, observatory design and operation, and access to publications and literature on radio astronomy, with emphasis on the type of contribution an Amateur can make with relatively unsophisticated equipment.

The ten dollar annual dues includes membership in the Astronomical League, with 170 affiliated astronomy groups and over 8000 members worldwide. For details, contact S.A.R.A. at 8 Stony Hill Road, Feeding Hills, MA 10130.

Callsign Badge Assignment

AMSAT's callsign badge donation campaign will shortly have a new manager. Kay Skoog, WDØEEK, XYL of Jim, WDØEEL, has volunteered to help process donation forms and badges in support of the campaign. To date the campaign has generated over \$2000 in revenues for AMSAT and has placed more than 200 badges in the hands of proud AMSAT supporters. Kay takes over the assignment from WA2LQQ who helped to launch the campaign earlier this year with WA6VGS and K6MFJ.

LO3 Launch Slated for June

In a recent press release the European Space Agency ESA has announced that the previously delayed launch of Ariane LO3 (the third such launch in the test series) will take place in June. Though no specific date had been set at this writing, the official press release cites "second half of June 1981."

The launch of LO3 had been scheduled for late last year but had been postponed pending final resolution of a complex test and evaluation regime dictated by the cataclysmic loss of LO2 last May 23. LO2 took AMSAT's Phase IIIA and two other passengers on a short ride to the floor of the Atlantic last year when one of the four, first stage Viking engines developed severe combustion instabilities shortly after liftoff from ESA's site at Kourou, French Guiana. ESA and CNES (the French National Space Agency) have since discovered a solution which cures the instability problem and on this basis have opted to resume the tests with LO3.

The solution lies in a modification to the engine propellant injectors. ESA says: "The modification selected consists in increasing the injection hole diameter for both propellants, thus reducing injection speed at the same mass flow." The tests of the modifications have been "successful so far...involving 13 injectors in over 30 tests by mid-March."

VHF Society Meeting

The 15th Annual Conference of the Central States VHF Society has been scheduled for July 31, Aug. 1 and 2, at the Holiday Inn-Airport, Sioux Falls, SD.

The featured technical program includes W1JR, WB6NMT, W6XJ, and AMSAT President W3IWI. Activities will include antenna gain and preamp-converter noise figure measurements, and a "South Dakota style" barbeque.

(At last year's conference, CSVHFS presented AMSAT with a \$500 donation toward construction of Phase IIIB.)

Further information is available from President Ed Gray, W0SD, or any CSVHFS member.

Top This

Literally thousands of amateurs around the world have helped build the various OSCAR spacecraft. Yet how many can make the claim of having worked, in some way, on Each And Every One?

ASR has learned of the existence of one such satellite pioneer and to top it off, this fellow is still actively involved in space hardware construction. He is Lance Ginner, K6GSJ, who along with the rest of the original Project OSCAR crew in 1960, designed and built OSCAR 1 on kitchen tables and in garages and basements throughout Southern California.

From the first "HI" to the Phase III satellite, Lance has added his creative touch to every amateur "bird." ASR would like to know of others who can claim twenty years involvement in amateur satellite building.

Congratulations, Lance, on your "twentieth"...and Thanks!

AMSAT Spotlight On: VE5XU

When the first OSCAR satellite was launched, there probably was no ham better-equipped to hear it than VE5XU. As a result of his years of duty as a flight navigator, "Gordy" Wightman had a running start when it came to tracking the new "bird". What seemed an unfathomable pit of numbers to most was to Gordy, a fellow who'd spend most of his career plotting courses and calculating positions, merely a cup of tea.

Now retired, Gordy has swapped DC-4's and turboprop aircraft for high-flying satellites, and adapts his skill as a navigator for finding AO7/8 on the orbital plotting chart he designed originally for OSCAR 1. From the shack walls QSL cards proudly proclaim "First Saskatchewan" or even "First Canada" reflecting the continuing presence Gordy maintains on the various satellites.

With radio interests that range from 160 meter DX to VHF propagation anomalies, VE5XU always has time to oblige a weak Mode A caller; perhaps a satellite-newcomer anxious to claim his first Canadian DX. Gordy isn't always the pursued, though. He has 53 countries worked via satellite, and lacks only Africa for WAC. On the HF bands, VE5XU ranks high too, with the first B.C. WAC and DXCC-200, the first VE 160 WAS award, and the first WAP award.

In Gordon's view, one of the most intriguing aspects of satellite operation is the unique propagation that sometimes occurs. Because of his extensive "window" on Europe, many tests have been performed with, among others, G3IOR. VE5XU has been heard in TU2 and by ZK1BX via trans-equatorial propagation and has used enhanced propagation to QSO G3IOR for as much as 15 minutes after local LOS on 10 meters. The frequent incidence of aurora borealis at his Regina QTH and Gordy's continued fascination with propagation effects mean he'll be monitoring 6 meters between passes. Or perhaps the other end of the spectrum will be examined with the lure of new DX on 160 meters the attraction.

Gordy says: "Hearing my own return from OSCAR 6, Mode A, was as thrilling as my very first contact." That's an impressive statement from a fellow who's been an active ham since 1933! 73 es GL to a FB OM from ASR and AMSAT!

VE5XU shown here in his shack



amateur satellite forum and to estimate budget requirements for such a forum. The committee is to report to the Board at the Autumn 81 meeting.

- Resolved that satellite based competition was a management tool to be employed for the maximum benefit of the radio art.
- Recommended that no awards be made for Phase IIIB Mode B operation until at least one year after commencement of general operations so that a year's operating experience might be employed to further gauge traffic density and risk.
- Recommended the institution of a satellite competition advisory board to advise the Directors.
- Favorably entertained suggestions that a DXCC type award using the L-transponder might offer an appropriate challenge with reduced risk of communications disruptions.
- Resolved that it would be impossible to continue the air mail posting of *ORBIT* to overseas members due to the unprecedented increases in postal rates. Overseas members can continue air mailing for \$7 additional for the balance of 1981, however.
- Resolved that ASR is an Official publication of AMSAT.
- Accepted with regrets the resignation of G3ZCZ as *ORBIT* Editor who will be moving to Israel this summer. Appointed WA2LQQ Editor-In-Chief (interim) and W1XT Managing Editor.
- Resolved that the operating modes of the various proposed transponders be as follows: Phase IIIB transponder called by AMSAT DL the U-transponder having 70 cm uplink and 2 meter downlink shall be called Mode B to be consistent with present usage on AO-7; Phase IIIB transponder called by AMSAT DL the L-transponder having an uplink at 23 cm and a downlink at 70 cm shall be named by its inventors, namely AMSAT DL; that any future transponder using the combination of 2 meters uplink and 70 cm downlink shall be called Mode J in honor of JAMSAT's AO-8 contribution.
- Heard a suggestion from DJ4ZC that the L-transponder frequencies proposed by AMSAT DL be reconsidered in view of revelations occurring during the meeting and the concern of representatives of the user community. In particular there were revelations concerning inter-satellite linking and potential ground-based radar QRM.
- Resolved that a previous resolution precluding AMSAT paid employees who are members of the Board of Directors from standing for election to that body was based on ill-founded apprehension and that the prior resolution is dissolved.
- Directed that the Corporate By-Laws be extensively revised to reflect the present size and scope of the organization.

New/Interesting DX

Stan, VE6AMB worked his second Asiatic Russian station recently, with a Mode B cw contact with RA0LFI in the U.S.S.R. (Thanks W0CY.)

Dayton Hamvention Glimpse

AMSAT Officials were returning to "normal" schedules after a productive, if a bit wearisome, weekend at the annual Dayton (Ohio) Hamvention. As is often the case with this particular conclave, it is a challenge to the reporter to describe most aspects of Dayton in less than superlatives. It is simply the largest gathering of hams in the world. ASR will describe the details of this year's Hamvention in the next issue and will present some photos of the fun/mayhem. In brief however, AMSAT can boast the following notable achievements:

- More than 100 new or renewing members
- More than 400 T-shirt and badge donations
- AMSAT Satellite Forum by W3IWI draws 200+ (in a room for 200—)
- Packet Radio Forum by KA6M and W4RI sponsored
- Very brisk booth "business"
- Very significant booth staffing support
- Strong positive feedback from potential commercial advertisers

Project OSCAR General Meeting

More than 40 California hams attended the April 11 General Meeting of Project OSCAR Inc., at Palo Alto, CA.

Six incumbent Directors were re-elected, including N6OO, W6XN, K6OPO, W6OLO, W6ASH, and WB6JNN. One new Director was elected: John Fail, KL7GRF/6, the digital group project manager of the SYNCART project. John Pronko, W6XN, was re-elected President of Project OSCAR, W6OLO was re-elected Secretary, and WB6KCJ was named Treasurer of the group.

W6XN reports the Project OSCAR Orbital Calendars were mailed in record time, and reminds everyone of the increase in postage to 18 cents. For the next calendar, send a business-size SASE by mid-June.

Project OSCAR has a fully-operational 23 cm linear translator in use in the Northern California area. This translator was designed to permit user experimentation and equipment calibration and test through an actual linear device similar to those carried by existing satellites. In order to better serve its users and to facilitate experimentation, the ground-based system will now have both 2-meter and 23-cm inputs and will soon have a 70-cm output to emulate anticipated L-transponder operation.

Progress remains steady on the joint Project OSCAR and AMSAT Canada SYNCART project. Plans call for three operational SYNCART prototype translators to be built. One will be installed in each of the three areas involved in the project: Northern California, Southern California, and Canada. These installations will lay the groundwork for hardware to be incorporated in the proposed geosynchronous satellite being developed jointly by the two satellite groups.

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